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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,753	05/26/2004	Douglas Zhu	81094665 / FMC 1698 PUS	3752
28395	7590	09/20/2004	EXAMINER	
BROOKS KUSHMAN P.C./FGTL 1000 TOWN CENTER 22ND FLOOR SOUTHFIELD, MI 48075-1238			FASTOVSKY, LEONID M	
			ART UNIT	PAPER NUMBER
			3742	

DATE MAILED: 09/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/709,753	ZHU ET AL.	
	Examiner	Art Unit	
	Leonid M Fastovsky	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 May 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>20040525</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6, 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderslice, Jr. et al (5,362,942) in view of Nixon (6,515,456). Vanderslice teaches a battery heating system and a method of controlling the battery heating system comprising a heater R for heating the battery 10, the battery temperature sensor 14, and a controller 16 enabling energy flow from the battery 10 to the heater R to heat the battery. However, Vanderslice does not teach a key-off condition and a suspend mode. Nixon teaches a battery charging system and method of charging the battery comprising an engine 16, a key-off sensor 16K, a timer means 200T with suspend mode of 4 hours (col. 9, lines 25-30), and a controller 200. It would have been obvious to one having ordinary skill in the art to modify Vanderslice's invention to include a key-off sensor in order to provide a signal indicating that the engine is off as taught by Nixon (col. 9, lines 13-15) and a timer means in order to place the controller in the suspend mode in order to indicate a valid state of the charge (SOC) as taught by Nixon (col. 8, lines 45-52, col. 9, lines 25-30).

3. Claims 7-12 and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderslice in view of Nixon.

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Vanderslice teaches substantially the claimed invention, but does not teach a battery state of charge (SOC). Nixon teaches the SOC (Fig. 9-10, col. 9, lines 17- 45).

It would have been obvious to one having ordinary skill in the art to modify the invention Vanderslice's invention to include the teaches for the system and method of SOC voltage settling during key-off condition, and also provide a stable battery where the voltage shift may occur by compensating for the shift by sensing means 10T and by estimating parasitic or key-off load by monitoring battery surface charge drain with logic (col. 9, lines 17-45).

4. Claims 5 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vanderslice in view of Nixon and further in view of Gollomp et al (6,424,157).

Vanderslice in view of Nixon teaches substantially the claimed invention, but does not teach the ambient temperature and a sleep mode.

Gollomp teaches a system and a method for monitoring a vehicle battery comprising an ambient temperature sensor 130, a sleep mode (Fig. 3), and a battery state of charge (SOC) (col. 14, lines 20-67, col. 15, lines 1-67, col. 16, lines 1-36). It would have been obvious to one having ordinary skill in the art to modify the invention of Vanderslice in view of Nixon to include an ambient temperature sensor to determine the energy to start the engine (col. 8, lines 46-59), a sleep mode as taught by Gollomp in order to provide real time conditions regarding potential loss of capability and the need for corrective action (col. 14, lines 21-67) and determine the battery SOC by computer (col. 9, lines 30-67, col. 10-, lines 1-5).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. 5795664 (rechargeable battery system), 5055656 (battery heating system), 5508126 (chargeable battery), 5281792 (battery warmr)..

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid M Fastovsky whose telephone number is 703-306-5482. The examiner can normally be reached on M-Th. 8.00 am -6.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 703-305-5766. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leonid M Fastovsky
Examiner
Art Unit 3742

Imf